

TSMC-99-651

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To: Commissioner of Patents and Trademarks
Washington, D.C. 20231

Fr: George O. Saile, Reg. No. 19,572
20 McIntosh Drive
Poughkeepsie, N.Y. 12603

Subject:

Serial No. 09/531,403 03/20/00

Ma-Chi Chiang, Hsien-Chin Lin,
Liaw-Ren Shih

A NOVEL METHOD FOR IMPROVING HOT
CARRIER LIFETIME VIA A NITROGEN
IMPLANTATION PROCEDURE PERFORMED
BEFORE OR AFTER A TEOS LINER
DEPOSITION

Grp. Art Unit: _____

INFORMATION DISCLOSURE STATEMENT

Enclosed is Form PTO-1449, Information Disclosure Citation
In An Application.

The following Patents and/or Publications are submitted to
comply with the duty of disclosure under CFR 1.97-1.99 and
37 CFR 1.56. Copies of each document is included herewith.

U.S. Patent 5,994,175 to Gardner et al., "High Performance
MOSFET with Low Resistance Design", discloses a N I/I before
the LDD.

U.S. Patent 5,972,783 to Arai et al., "Method for Fabricating a Semiconductor Device Having a Nitrogen Diffusion Layer", teaches an angled N2 and LDD I/I.

U.S. Patent 5,885,877 to Gardner et al., "Composite Gate Electrode Incorporating Dopant Diffusion-Retarding Barrier Layer Adjacent to Underlying Gate Dielectric", discloses a LDD process with a N2 anneal.

U.S. Patent 5,920,782 to Shih et al., "Method for Improving Hot Carrier Degradation", discloses a N2 I/I to improve hot carrier degradation.

Sincerely,

A handwritten signature in black ink, appearing to read 'SBA', with a long horizontal flourish extending to the right.

Stephen B. Ackerman,
Reg. No. 37761